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CITY OF CORONADO

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GENERAL PLAN CIRCULATION ELEMENT

Adopted by the City Council

_____, 1993

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City of Coronado Circulation Element

Foreword

The Circulation Element is a Mandated Element of the City of Coronado General Plan Policy Document. The following general questions were considered in the formulation of this document:

Which streets are to be major thoroughfares?
How shall traffic be controlled?
What traffic programs are advisable?
How can the adverse impact of traffic be mitigated?
Where should bicycle routes be located?
How should motor vehicle, bicycle and pedestrian traffic be separated?

The City of Coronado adopted its first Circulation Element in 1971. The City Council on July 17, 1984 appointed a nine member ad hoc Transportation Circulation Committee to organize community participation in the development of a new draft General Plan Circulation Element. This City Council action initiated a long review process that included numerous workshops and public hearings before this committee, the Planning Commission and the City Council.

In November of 1988, informal discussions were initiated between the City, Navy, Caltrans and commuter representatives in order to address bridge traffic related issues. The City Council approved formation of the formal Unified Transportation Planning Group (UTPG) on January 17, 1989 to develop a California Transportation Commission funding request for bridge traffic related circulation projects. The UTPG was tasked by the City Council to create a Unified Transportation Plan to include:

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Introduction

A city's circulation system permits and facilitates movement on both land and water by pedestrians and drivers of both motorized and non-motorized vehicles. The City's streets, navigation channels, bicycle routes, truck routes, et cetera, are all aspects of the circulation system. The interrelationships between the different modes of transportation, and among circulation, transportation, parking and land use policies further complicates circulation analysis. These interrelationships are evidenced by the coordination of the policies and programs presented in the City's General Plan Circulation, Transportation, Parking and Land Use Elements.

A circulation hierarchy of street classification system is established based on the desired role of each system element. It is this coordinated and integrated street system (summarized on Table "A") which provides the framework for achieving community goals.

All Coronado city streets are classified as either arterial, collector or local. Arterial streets are further divided into principal arterials and minor arterials. The criteria for determining classification are the importance and purpose of traffic movement and volumes on a particular street. Arterial streets carry traffic primarily to, from and through the city. Principal arterials carry large volumes and, in Coronado, are also state highways. Minor arterials carry much smaller volumes on city streets. Collector streets support the arterial street system connecting local and arterial streets. Collector streets permit locally destined or generated traffic access to or from the arterial street system. Streets that carry the smallest traffic volumes, and that primarily function to provide access to adjoining property are termed "local" streets.

This Circulation Element addresses the above technical concerns in an attempt to achieve the circulation system goals expressed below.

Circulation System Goals

The Circulation System Goals of the City of Coronado City Council are to:

1. Provide a disciplined traffic circulation system to correlate with and assist in achieving the following overall concept for the Coronado General Plan: "To preserve and improve Coronado primarily as a beautiful, pleasant residential community in which to live, work, shop and pursue leisure time activities."

TABLE A

STREET CLASSIFICATION CONSIDERATIONS

<u>Classification</u>	<u>R/W Width+</u> (ft)	<u>Pavement Width+</u> (ft)	<u># Lanes+</u>	<u>Design ADT</u>	<u>Speed Limit</u> (mph)	<u>Primary Purpose</u>
Major Arterial	80*	64*	4D	>15,000	25 to 55	State highway system; with limited driveway access
Minor Arterial	80	48	2U	7,500 to 15,000	25 to 30	Connects State Highways to collectors; with driveway access
Collector Street	80	48	2U	2,500 to 7,500	25 to 30	Collect and distribute local traffic; with driveway access
Local Street	60	40	2U	<2,500	25 to 30	Intended for direct land and driveway access

ADT = Average Daily Trips

D = Divided

U = Undivided

R/W = Right of Way

* Also 80' R/W and 48' width as a one-way street

+ Minimum Standards; not all existing streets or "lanes" meet the current minimum standards

1. The first step is to determine the total number of items in the sample. This is done by counting the number of items in each group and then summing them up.

2. The second step is to determine the number of items in each group.

3. The third step is to determine the number of items in each group.

4. The fourth step is to determine the number of items in each group.

5. The fifth step is to determine the number of items in each group.

Group	10	20	30	40	50	60	70	80	90	100	Total
Group 1	10	20	30	40	50	60	70	80	90	100	500
Group 2	10	20	30	40	50	60	70	80	90	100	500
Group 3	10	20	30	40	50	60	70	80	90	100	500
Group 4	10	20	30	40	50	60	70	80	90	100	500
Group 5	10	20	30	40	50	60	70	80	90	100	500
Group 6	10	20	30	40	50	60	70	80	90	100	500
Group 7	10	20	30	40	50	60	70	80	90	100	500
Group 8	10	20	30	40	50	60	70	80	90	100	500
Group 9	10	20	30	40	50	60	70	80	90	100	500
Group 10	10	20	30	40	50	60	70	80	90	100	500

10-10-10

10-10-10

2. Accommodate present and future traffic in a manner consistent with the higher priority of the Coronado General Plan concept to preserve the community's residential character.
3. Achieve a systematic classification scheme for city streets based on function and compatibility with adjacent land uses.
4. Provide circulation patterns that are continuous and clear to the users.
5. Provide circulation service that is safe for pedestrian, bicycle and motor vehicle traffic, efficient for all users, and direct in accordance with movement desires.
6. Respect the integrity and stability of neighborhoods, school areas, hospitals, and other activity centers.
7. Minimize pedestrian/ bicycle/ motor vehicle conflict points within the system.
8. Provide adequate pedestrian, bicycle and motor vehicle access to all parcels.
9. Reduce the adverse environmental and safety impacts and ameliorate the unpleasant side effects of traffic circulation (bulk, noise, fumes, clutter, cross traffic barrier and the physical isolation of areas from each other).
10. Minimize through traffic movement on local residential streets.
11. Reduce excessive traffic speeds on residential streets through the use of traffic control measures and modifications to street design as appropriate.
12. provide residential streets with the clear appearance of their local function.
13. Achieve on the arterial system a level of service (LOS) "C" with a peak traffic hour LOS of "D" through the year 2010. (Appendix "B" defines and explains LOS).

The Circulation Plan

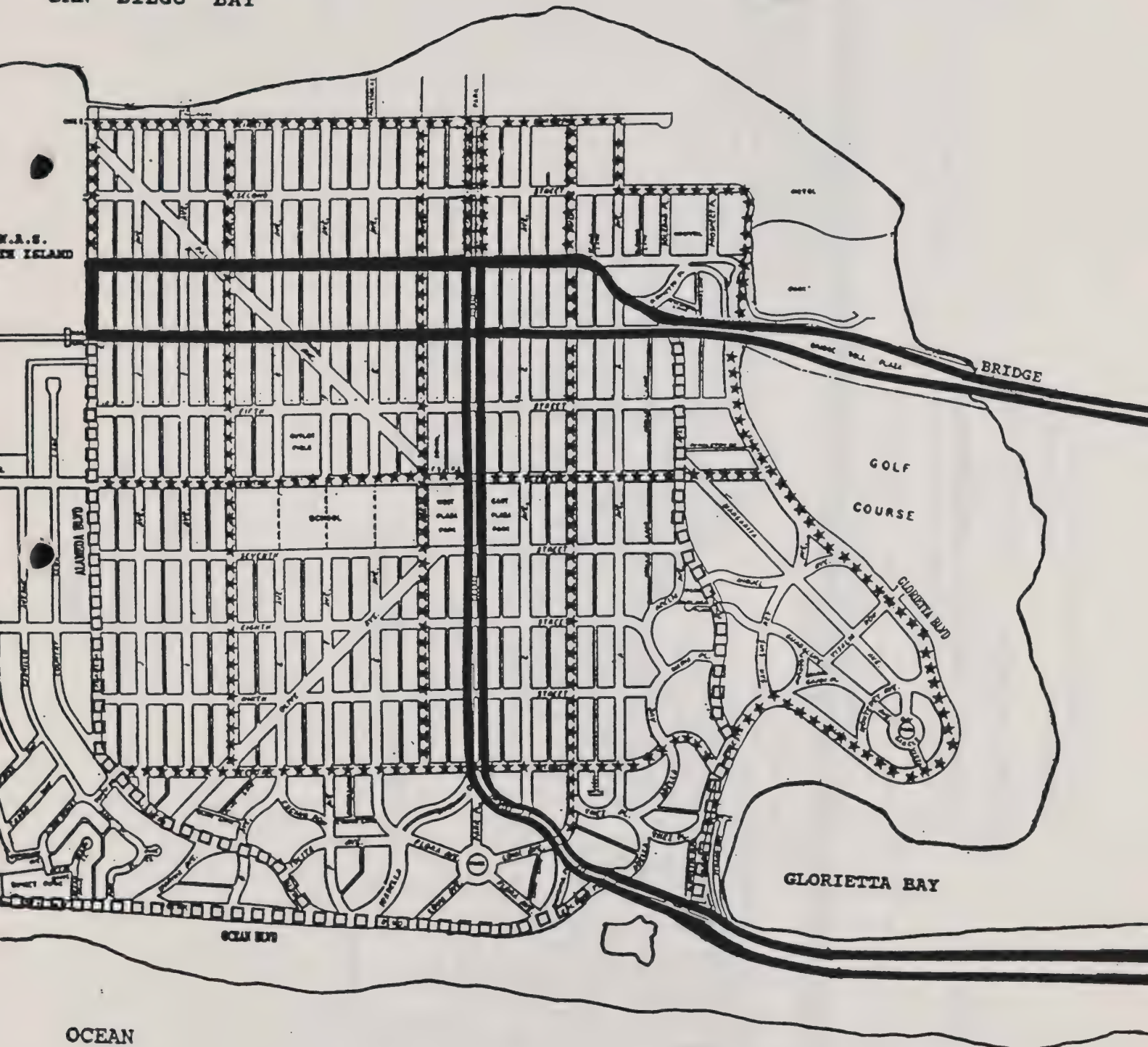
The Circulation Plan (Figures "A" and "B" on pages E3 and E4) continues to rely on existing state highways 75 and 282 to compose the principal arterials for the City. The

FIGURE A
CIRCULATION PLAN
(THE VILLAGE)

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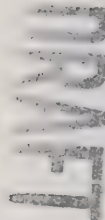
SAN DIEGO BAY



KEY

PRINCIPAL ARTERIAL	
MINOR ARTERIAL	
COLLECTOR	

(SILVER STRAND)



Third Street/Fourth Street "couplet" (which includes portions of Pomona Avenue and Alameda Boulevard) provide primary access from the bridge to North Island Naval Air Station. Third Street is designated one-way traffic westbound and Fourth Street is designated one-way traffic eastbound.

Orange Avenue will remain the principle arterial for north/south traffic. State Highway 75 will continue to be the primary arterial through the City from the south; composed of the strand highway, Orange Avenue, Third and Fourth Streets east of Orange Avenue, Pomona Avenue (between Third and Fourth) and the bridge. Third and Fourth Streets west of Orange Avenue and Alameda Boulevard between Third and Fourth Streets will continue to compose State Highway 282, and (along with State Highway 75) will continue to be the primary route from the bridge to North Island Naval Air Station. Third and Fourth Streets (and Alameda Avenue and the Pomona Avenue spur between Third and Fourth Streets) will remain one-way as currently designed.

The Circulation Plan does not permit traffic to cross Fourth Street on Glorietta Boulevard or Pomona Avenue. Traffic proceeding between the Strand and the Naval Air Station will continue to be dispersed according to the available gate most convenient for each driver. Main gate traffic will still use Alameda Boulevard and Gate 2 vehicles can proceed via Orange Avenue and First Street.

The Circulation Plan assumes that the realignment of the westbound roadway of State Route 75 near Pomona Avenue will be eventually achieved per the Unified Transportation Plan. Similarly, the Circulation Plan assumes that certain of the more detailed traffic management proposals of the UTP (such as, new traffic lights and turning lanes, synchronization of traffic lights, et cetera) will also be implemented and that some will not be implemented (see Appendix "A").

The functional classification of streets is listed below and shown on Figures "A" and "B".

- **Principal Arterials** -

Pomona Avenue/Third Street/ Alameda Boulevard/Fourth Street "Couplet" from the Bridge to NAS North Island

Orange Avenue from Third Street to Avenida del Sol

Silver Strand Boulevard from Avenida del Sol to Imperial Beach city limits

- **Minor Arterials -**

Ocean Boulevard - Dana Place from NAS Gate 5 to Orange Avenue

Pomona Avenue (and a short segment of Glorietta Boulevard) from Fourth Street to Orange Avenue

Alameda Boulevard from Fourth Street to Ocean Boulevard

- **Collector Streets -**

Orange Avenue from First Street to Third Street

First Street from A Avenue to Alameda Boulevard

Alameda Boulevard from First Street to Third Street

Glorietta Boulevard from Fourth Street to Pomona Avenue

Glorietta Boulevard (as extended by new tidelands roadway) from bridge toll plaza to Second Street; Second Street from new tidelands roadway to A Avenue; A Avenue from Second Street to First Street

B Avenue from Orange Avenue to First Street

D Avenue from Tenth Street to First Street

H Avenue from Tenth Street to First Street

Sixth Street from Alameda Boulevard to Glorietta Boulevard

Tenth Street from Alameda Boulevard to Pomona Avenue

Coronado Cays Boulevard

Green Turtle Road from Coronado Cays Boulevard to Admiralty Cross

Grand Caribe Causeway

Coronado Bay Road

- **Local Streets -**

All streets not classified as arterial, minor arterial or collector are local streets.

Truck, Wide Load and Hazardous Material Routes

The Circulation Plan provides interim routes for trucks and for vehicles with hazardous materials. The five truck routes are depicted on Figure "C" and are described as follows:

- Route 1** - Silver Strand Highway, north along Orange Avenue to First Street;
- Route 2** - Bridge to NAS Main Gate via Fourth Street, Pomona Avenue, Third Street, and Alameda Boulevard. Return is via Fourth Street;
- Route 3** - Orange Avenue to Gate 5 of NAS North Island along Ocean Boulevard (for large loads and hazardous materials);
- Route 4** - Orange Avenue to Gate 2 NASNI via First Street; and
- Route 5** - From Bridge, north onto Glorietta, west on Second Street, north on "A" Avenue then west on First Street to Orange Avenue.

Hazardous materials are not permitted on the bridge. The Circulation Plan accommodates vehicles with highly hazardous materials (such as explosives) or wide loads via the Strand-Orange Avenue-Dana Place-Ocean Boulevard route. The transportation of explosives and any other highly hazardous materials is to be by barge whenever possible. Figure "C" notes that less hazardous materials (such as gasoline trucks) may also be routed down Orange Avenue and down Third and Fourth Streets to the Naval Air Station.

Bus, Bicycle and Pedestrian Circulation

Figures "D" and "E" respectively depict the existing Metropolitan Transit Development Board (MTDB) bus routes 901, 902, and 903 and the City's 904 shuttle bus route. Routes 902 and 903 are rush hour augmentations for Route 901. The routes shown on Figures "D" and "E" are subject to negotiation between the City and the operating entities, and are not established or mandated by depiction in these Figures.

The MTDB 901 bus route carries a rack capable of transporting a maximum of five bicycles. Therefore, this bus route allows cyclists to traverse the bay via the Coronado-San Diego Bay Bridge. The pedestrian-bicycle ferry (addressed on Page II-E12) similarly permits such cyclist crossings of the Bay.

FIGURE C

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TRUCK, WIDE LOAD & HAZARDOUS MATERIALS ROUTES



SAN DIEGO BAY

KEY

- HAZARDOUS MATERIALS □□□□□□
- WIDE LOAD & HIGHLY HAZARDOUS MATERIALS ★★★★★★
- TRUCKS —————

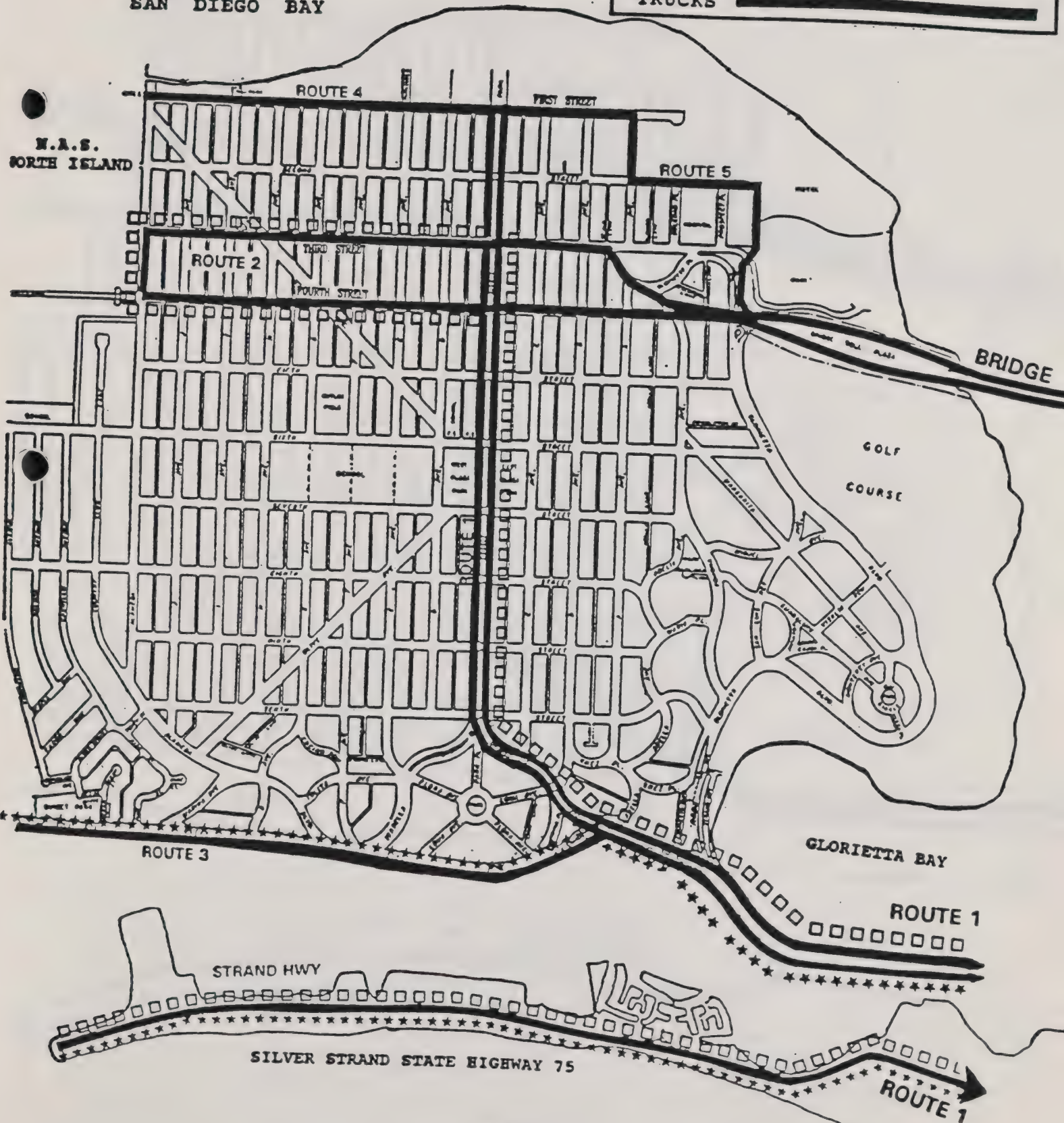


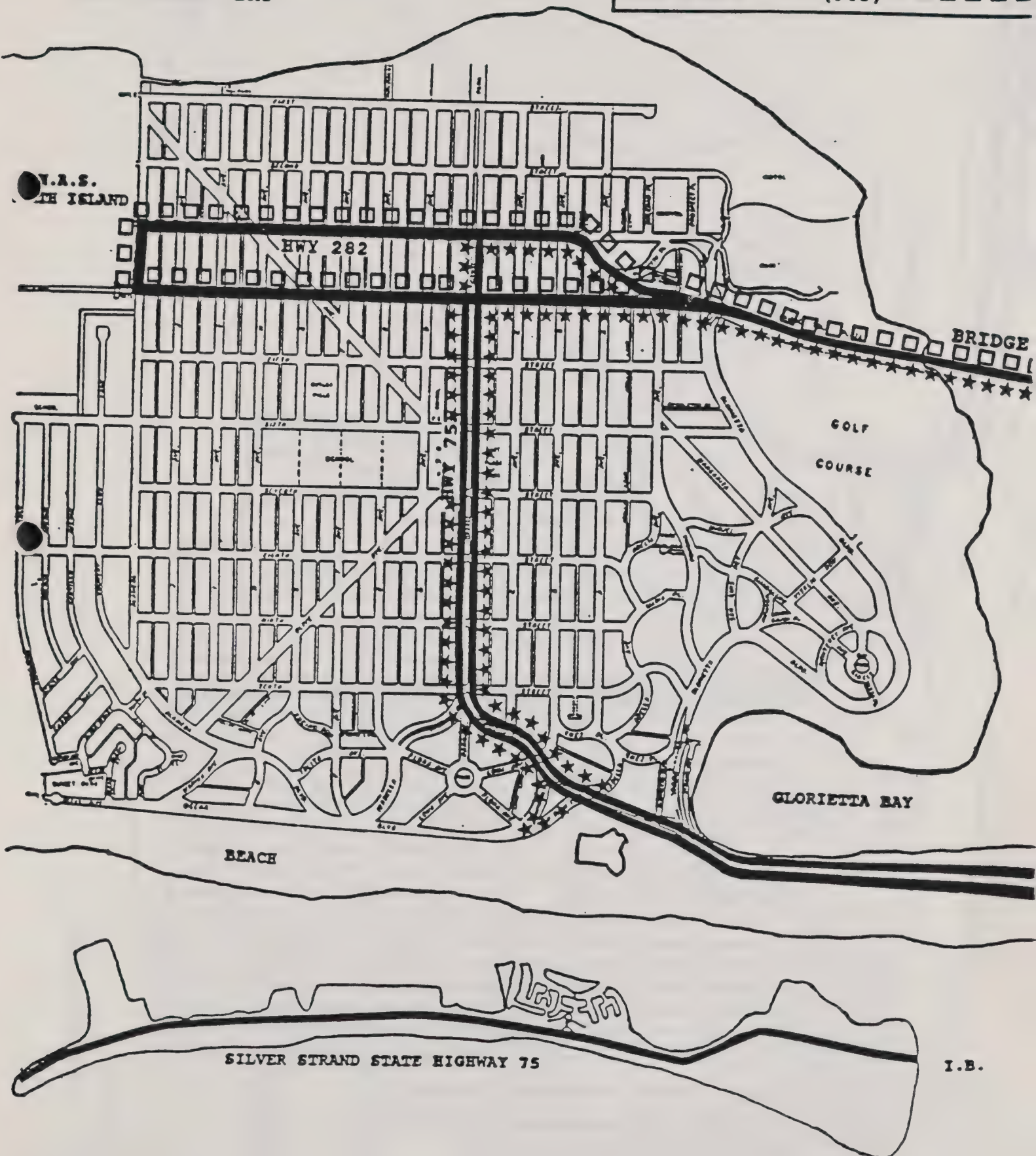
FIGURE D

MTDB BUS ROUTES

KEY

STRAND EXPRESS (901)	—————
BUS ROUTE (902)	★★★★★★
BUS ROUTE (903)	□□□□□□

SAN DIEGO BAY



FIGURE

SHUTTLE BUS

SAN DIEGO BAY

KEY

SHUTTLE BUS

N.A.S.
NORTH ISLAND

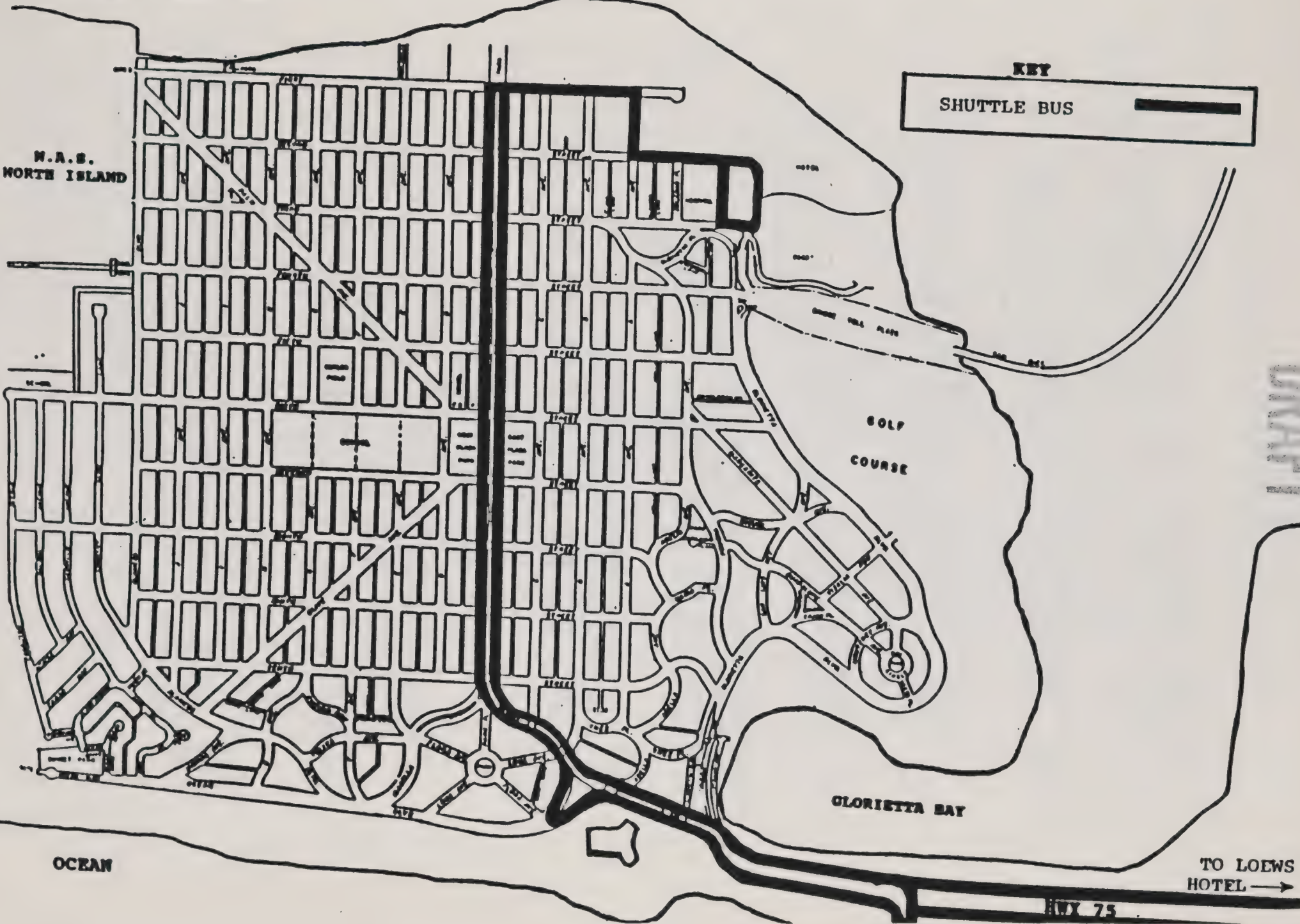
GOLF
COURSE

GLORIETTA BAY

OCEAN

TO LOEWS
HOTEL →

HWY 75



II-E11

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Figure "F" presents the City's "Bicycle and Pedestrian Routes". "...Three classifications of bikeways have been widely adopted on the basis of standards developed in Germany and subsequently modified by the California Department of Transportation.

Class I - Bike Paths: A completely separate right-of-way designed for the exclusive use of bicycles. They are found primarily in recreation areas, rural areas and new developments.

Class II - Bike Lanes: A restricted right-of-way designated for the exclusive or semi-exclusive use of bicycles. They are usually provided on an existing roadway, permitting cross traffic or parking but separated from through traffic by a curb or barrier.

Class III - Bike Routes: A shared right-of-way designated by signs or pavement markings. They are provided on an existing roadway, permitting use by all types of vehicles."*

At present, the City has a bike lane in Tidelands Park that extends along Glorietta Boulevard to Second Street, and has one bike path down the Silver Strand and another around the bridge toll plaza. Figure "F" depicts the City's bike lane, bike paths and bike routes.

Figure "F" also denotes those pedestrian routes that are also available for bike use along the City's shoreline. In addition, some type of facility to facilitate pedestrian crossing of Fourth Street is proposed for somewhere east of Orange Avenue to link the Golf Course area with Tidelands Park.

Water Vessel Circulation

Existing and proposed pedestrian/bicycle ferry "Water Routes" are depicted on Figure "G". The ferry presently traverses the bay from just North of the Broadway Street pier in the City of San Diego to the end of "B" Avenue in Coronado. Consideration should also be given to providing a similar service from the San Diego site to the "JK" pier area on North Island Naval Air Station. Existing and

* SOURCE: Schultz, Marilyn et al, Encyclopedia of Community Planning and Environmental Management. 1984. Page 36. Note that California statutes specify that a bike lane provides a striped lane for one-way bike travel on a street or highway. Coronado's one bike lane is denoted by a striped lane, not by curbs or barriers.

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Figure F
Bicycle and Pedestrian Route

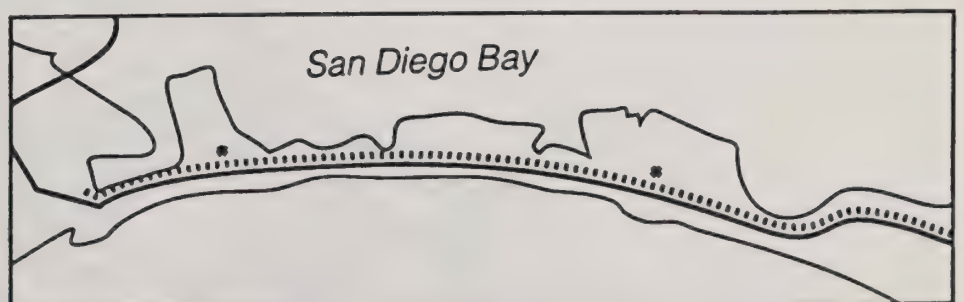
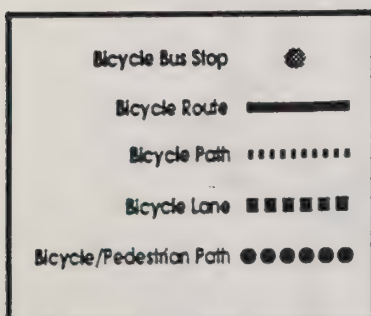
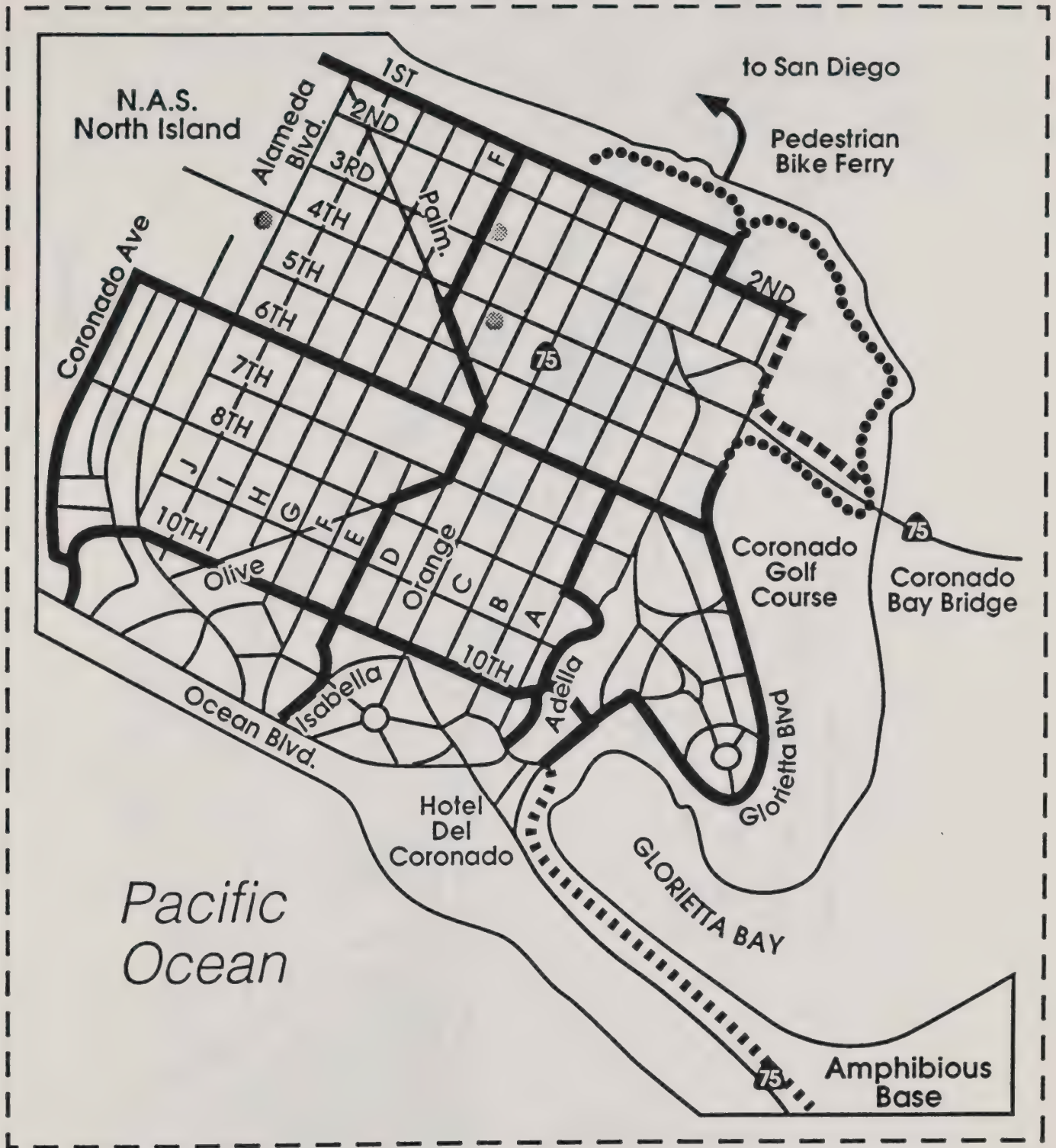
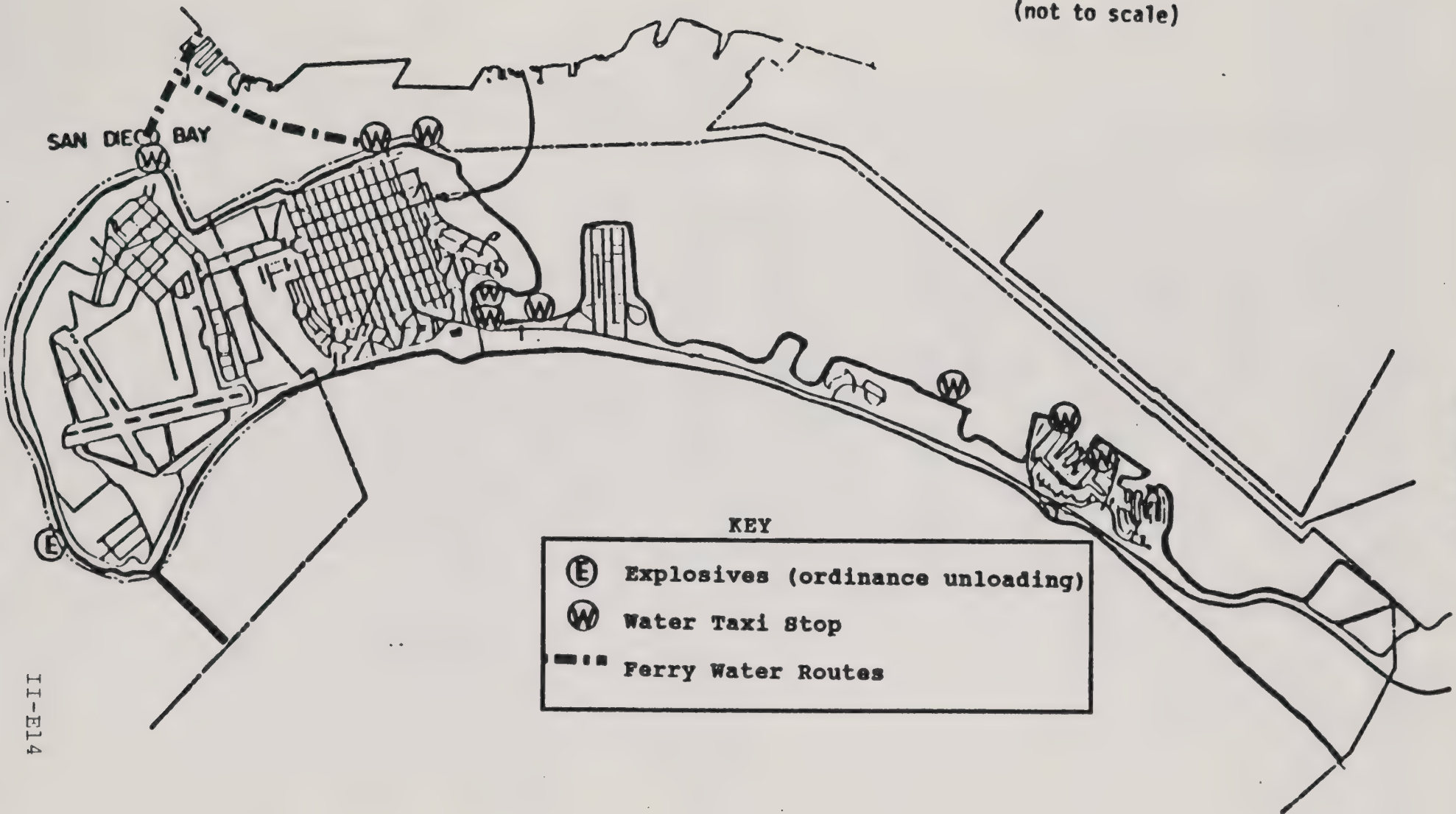


Figure 6
WATER ROUTES

CITY OF CORONADO
(not to scale)



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proposed facilities that would permit water taxi use on the bay are also noted on Figure "G", as is the ordinance loading pier on North Island Naval Air Station.

The sites suitable for water taxi usage illustrated on Figure "G" are:

Existing

North Island Naval Air Station
Coronado Yacht Club
Glorietta Bay Marina
Coronado Municipal Harbor Master Dock
Coronado Cays Yacht Club
Old Ferry Landing Commercial Complex
Le Meridien
Loew's Coronado Bay Resort

Proposed

Silver Strand State Park Marina

Appendix A

Unified Transportation Plan Projects

The UTP projects will be reviewed and implemented or rejected as deemed appropriate by the City Council during the time frame of this Circulation Element.* The status of the proposed UTP projects as of June 1993 is as follows:

- AS-1. Third Street Gate Entrance for NASNI: Project dropped by Navy (but still supported by City).
- AS-2. Traffic signals at Third and Alameda, and at Fourth and Alameda: While the Third Street light has not yet been addressed by City Council, the City Council determined on January 19, 1993 to support a signal light at Fourth Street and Alameda Boulevard even if the Third Street light is not implemented.
- AS-3. NASNI Gate 5 (Ocean Blvd.): Not yet addressed by City Council. Needs further work, expansion and discussion. Not supported by City in its present form.
- AS-4. Double left turn lanes northbound Orange to R.H. Dana: Approved.

* NOTE: The map on page 6 of the UTP does not represent the circulation plan adopted by the City.

- AS-5. Double left turn lanes, southbound Orange to eastbound Fourth: Rejected by City Council as proposed; tabled for further discussion.
- AS-6. Traffic signals at Third and "B": Not yet addressed by City Council.
- AS-7. Traffic signals at Fourth and "B": Not yet addressed by City Council.
- AS-8. Pedestrian overcrossing, Fourth and Glorietta: Dropped by City Council in its proposed form; alternative locations east of Orange Avenue and concepts will be considered.
- AS-9. Traffic signals at Third and "H", and at Fourth and "H": Not yet addressed by City Council.
- AS-10. SR75, Del Sol, Pomona intersection: Concept rejected by City Council.
- AS-11. Traffic signals at Sixth and Orange: Approved.
- AS-12. Traffic signals at Ninth and Orange: Concept rejected by City Council.
- AS-13. Truck Route System: Approved.
- AS-14. Emergency signs to warn motorists of bridge closures: Approved for Main Gate NASNI; approved for Main Gate at NAB; rejected by City Council for Fourth and Orange, and for Silver Strand.
- AS-15. Emergency traffic map for NAB and NASNI on-station commuters: Bases have plans, but unknown whether anything is published yet.
- AS-16. Realignment of SR75 at Fourth near Pomona: Approved.
- M-1. Sound barrier wall concept on Third and Fourth public right of way rejected by the residents and therefore has been dropped by the City Council. Private property mitigation and public property landscaping has been requested. Undergrounding of utilities has been completed.

Appendix B

Level of Service For Signalized Intersections*

Level of service (LOS) for signalized intersections is defined in terms of delay. Delay is a measure of driver discomfort, frustration, fuel consumption, and lost travel time. Specifically, level-of-service criteria are stated in terms of the average stopped delay per vehicle. The criteria are given in the following Table "B".

* SOURCE: The 1985 CALTRANS Highway Capacity Manual.

TABLE B

Level of Service For Signalized Intersections*

<u>LEVEL OF SERVICE</u>	<u>STOPPED DELAY PER VEHICLE (SEC)</u>
A	≤ 5.0
B	5.1 to 15.0
C	15.1 to 25.0
D	25.1 to 40.0
E	40.1 to 60.0
F	> 60.0

Level-of-service A describes operations with very low delay, i.e., less than 5.0 sec per vehicle. This occurs when progression is extremely favorable, and most vehicles arrive during the green phase. Most vehicles do not stop at all.

Level-of-service B describes operations with delay in the range of 5.1 to 15.0 sec per vehicle. This generally occurs with good progression and/or short cycle lengths.

Level-of-service C describes operations with delay in the range of 15.1 to 25.0 sec per vehicle. These higher delays may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear in this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.

Level-of-service D describes operations with delay in the range of 25.1 to 40.0 sec per vehicle. At level D, the influence of congestion becomes more noticeable. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.

Level-of-service E describes operations with delay in the range of 40.1 to 60.0 sec per vehicle. This is considered to be the limit of acceptable delay. Individual cycle failures are frequent occurrences.

Level-of-service F describes operations with delay in excess of 60.0 sec per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with oversaturation, i.e., when arrival flow rates exceed the capacity of the intersection.

* SOURCE: The 1985 CALTRANS Highway Capacity Manual.



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TABLE 2

LEVEL OF SERVICE FOR HIGHWAY INTERSECTIONS

LEVEL OF SERVICE	PERCENT OF TRAFFIC
A	0.0 to 10.0
B	10.1 to 20.0
C	20.1 to 30.0
D	30.1 to 40.0
E	40.1 to 50.0
F	50.1 to 60.0
G	60.1 to 70.0
H	70.1 to 80.0
I	80.1 to 90.0
J	90.1 to 100.0

Level-of-service A describes operations with very low delay, 1.0 sec or less per vehicle. This occurs when progression is extremely favorable, and most vehicles arrive during the green phase. Most vehicles do not stop at all.

Level-of-service B describes operations with delay in the range of 1.0 to 1.9 sec per vehicle. This generally occurs with good progression and short cycle lengths.

Level-of-service C describes operations with delay in the range of 2.0 to 2.9 sec per vehicle. There is some delay and some loss of time for vehicles. Progression is fair, but not ideal. This level is the most common for urban arterials. The number of vehicles stopped is small, and this level, although many still pass through the intersection without stopping.

Level-of-service D describes operations with delay in the range of 3.0 to 3.9 sec per vehicle. At level D, the influence of progression becomes more noticeable. Delay becomes more significant, and the progression is not ideal. This level is the most common for rural arterials.

Level-of-service E describes operations with delay in the range of 4.0 to 4.9 sec per vehicle. This is characterized by the fact of significant delay. Individual vehicles follow are frequent occurrences.

Level-of-service F describes operations with delay in excess of 5.0 sec per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with oversaturation, i.e., when arrival flow rates exceed the capacity of the intersection.

* SOURCE: THE 1965 CALIFORNIA HIGHWAY CAPACITY MANUAL.